Docket No.: 03108/0202223-US0

Application No. 10/519,219 Amendment dated June 23, 2009 Reply to Office Action of April 24, 2009

AMENDMENTS TO THE CLAIMS

The following listing of claims is presented as a courtesy to the Examiner. No amendments are made herein.

1. (Previously presented) A compound of formula (I),

and its tautomeric forms, its stereoisomers, and its pharmaceutically acceptable salts and solvates.

wherein R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11 and R12 may be the same or different and each independently represent hydrogen, halogen, perhaloalkyl, hydroxy, amino, nitro, cyano, formyl, amidino, guanidino, substituted or unsubstituted groups such as linear or branched (ClC12) alkyl, (C2-C12)alkenyl, (C2-C12)alkynyl, (C3-C7)cycloalkyl, (C3-C7)cycloalkenyl, bicycloalkyl, bicycloalkenyl, (C1-C12)alkoxy, cyclo(C3-C7)alkoxy, aryl, aryloxy, aralkyl, aralkoxy, heterocyclyl, heteroaryl, heterocyclylalkyl, heteroaralkyl, heteroaryloxy, heteroaralkoxy, heterocyclylalkyloxy, acyl, acyloxy, acylamino, monoalkylamino, dialkylamino, arylamino, diarylamino, aralkylamino, alkoxycarbonyl, aryloxycarbonyl, aralkoxycarbonyl, heterocyclylalkoxycarbonyl, heteroaryloxycarbonyl, hydroxyalkyl, aminoalkyl, monoalkylaminoalkyl, dialkylaminoalkyl, alkoxyalkyl, aryloxyalkyl, aralkoxyalkyl, alkylthio, thioalkyl, alkoxycarbonylamino, aryloxycarbonylamino, aralkyloxycarbonylamino, alkylaminocarbonylamino, alkylaminocarbonylamino, dialkylguanidino, hydroxylamino; or the adjacent groups like R1 and R2 or R2 and R3 or R3 and R4 or R5 and R6 or R6 and R7 or R7 and R8 together with carbon atoms to which they are attached may form a 5, 6, or 7 membered ring, which may further optionally contain

Application No. 10/519,219 Amendment dated June 23, 2009 Reply to Office Action of April 24, 2009

one or more double bonds and/or one or more heteroatoms such as the group "Oxygen", "Nitrogen", "Sulfur" or "Selenium" and combinations of double bond and heteroatoms; or R9 and R10 or R11 and R12 together represent double bond attached to "Oxygen" or "Sulfur"; or R9 and R10 or R11 and R12 together with the carbon atoms to which they are attached may form a 3, 4, 5, or 6 membered ring, which may further optionally contain one or more double bonds, and/or one or more heteroatoms such as the group "Oxygen", "Nitrogen", "Sulfur" or "Selenium," as above defined; R13 and R14 may be the same or different and each independently represents hydrogen, substituted or unsubstituted groups such as linear or branched (C1-C I2)alkyl, (C2-CI2)alkenyl, (C2Cdalkynyl, (C2-Cdalkanoyl (C3-C7)cycloalkyl, (C3-C7)cycloalkenyl, bicycloalkyl, bicycloalkyl, bicycloalkyl, heteroaryl, or heterocyclylalkyl; or R13 and R14 along with the nitrogen atom, may form a 3, 4, 5, 6 or 7-membered heterocyclic ring, wherein the ring may be further substituted, and it may have either one, two or three double bonds or "additional heteroatoms", as defined above; and

"n" is an integer ranging from 1 to 8.

(Previously presented) A compound according to Claim 1, which is selected from the group consisting of:

6-(2-Ν,Ν-Διμετηυλαμινοετηυλ)βενζο[δ]ισοτηιαζολο[3,2-α]ινδολ-Σ,Σ-διοχιδε;΄

$$\begin{split} &4\text{-Bρομo-6-}(2\text{-N},N\text{-}\delta\iota\mu\epsilon\tau\eta\nu\lambda\alpha\mu\iota\nu\nu\epsilon\tau\eta\nu\lambda)\beta\epsilon\nu\zeta_0[\delta]\iota\sigma\sigma\tau\eta\alpha\zeta_0\lambda\sigma[3,2\text{-}\alpha]\nu\delta\sigma\lambda\text{-}\Sigma,\Sigma\text{-}\delta\iota\sigma\chi_0\delta\epsilon; \\ &4\text{-Chloro-6-}(2\text{-N},N\text{-}dimethylaminoethyl)\text{-}benzo[d]isothiazolo[3,2\text{-}a]indol\text{-}S,S\text{-}dioxide; } \\ &6\text{-}(2\text{-N},N\text{-}Dimethylaminoethyl)\text{-}4\text{-}fluorobenzo[d]isothiazolo[3,2\text{-}a]indol\text{-}S,S\text{-}dioxide; } \\ &6\text{-}(2\text{-N},N\text{-}Dimethylaminoethyl)\text{-}4\text{-}methylbenzo[d]isothiazolo[3,2\text{-}a]indol\text{-}S,S\text{-}dioxide; } \\ &6\text{-}(2\text{-N},N\text{-}Dimethylaminoethyl)\text{-}4\text{-}methylbenzo[d]isothiazolo[3,2\text{-}a]indol\text{-}S,S\text{-}dioxide; } \\ &6\text{-}(2\text{-N},N\text{-}Dimethylaminoethyl)\text{-}4\text{-}methylbenzo[d]isothiazolo[3,2\text{-}a]indol\text{-}S,S\text{-}dioxide; } \\ \end{aligned}$$

hydrochloride salt;

6-(2-N,N-Dimethylaminoethyl)-4-methylbenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide maleate salt:

 $6\hbox{-}(2\hbox{-}N,N\hbox{-}Dimethylaminoethyl)\hbox{-}4\hbox{-}methylbenzo[d] is othiazolo[3,2\hbox{-}a] indol\hbox{-}S,S\hbox{-}dioxide$

D,L-malic acid salt;

6-(2-N,N-Dimethylaminoethyl)-4-methylbenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide oxalate salt:

6-(2-N,N-Dimethylaminoethyl)-4-methylbenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide citrate salt:

 $\label{lem:condition} 6-(2-N,N-Dimethylaminoethyl)-4-methoxybenzo[d] isothiazolo[3,2-a] indol-S,S-dioxide; \\ 6-(2-N,N-Dimethylaminoethyl)-8-methoxybenzo[d] isothiazolo[3,2-a] indol-S,S-dioxide; \\ 6-(2-N,N-Dimethylaminoethyl$

4-Bromo-6-(2-N,N-dimethylaminoethyl)-8-methoxybenzo[d]isothiazolo[3,2-a]indol-S,Sdioxide;

 $\label{lem:condition} \mbox{4-Chloro-6-(2-N,N-dimethylaminoethyl)-8-methoxybenzo[d]} \mbox{isothiazolo [3 ,2-a]} \mbox{indol-S,Sdioxide;}$

 $6\hbox{-}(2\hbox{-}N,N\hbox{-}Dimethylaminoethyl)\hbox{-}4\hbox{-}fluoro\hbox{-}8\hbox{-}methoxybenzo[d] is othiazolo[3,2\hbox{-}a] indol\hbox{-}S,S dioxide;}$

6-(2-N,N-Dimethylaminoethyl)-4-methyl-8-methoxybenzo[d]isothiazolo[3,2-a]indolS,

S-dioxide;

Application No. 10/519,219 Amendment dated June 23, 2009 Reply to Office Action of April 24, 2009

- 2-Chloro-6-(2-N,N-dimethylaminoethyl)benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;
- 2,4-Dichloro-6-(2-N,N-dimethylaminoethyl)-benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide:
- 2.3-Dichloro-6-(2-N,N-dimethylaminoethyl)-benzo[d]isothiazolo[3,2-a]indol-S,Sdioxide;
- 5-Chloro-6-(2-N,N-dimethylaminoethyl)-2-methylbenzo[d]isothiazolo[3,2-a]indol-S,Sdioxide;
- 2,4,5-Trichloro-6-(2-N,N-dimethylaminoethyl)-benzo[d]isothiazolo[3,2-a]indol-S,Sdioxide;
- 6-(2-N,N-Dimethylaminoethyl)-2,4-difluorobenzo[d]isothiazolo[3,2-a]indol-S,Sdioxide;
- $6\hbox{-}(2\hbox{-}N,N\hbox{-}dimethylaminoethyl)\hbox{-}4\hbox{-}fluoro\hbox{-}8\hbox{-}methylbenzo[d] is othiazolo[3,2\hbox{-}a] indol\hbox{-}S,S dioxide;$
- 2,4-Difluoro-6-(2-N,N-dimethylaminoethyl)-8-methylbenzo[d] is othiazolo[3,2-a] indolS,
- S-dioxide;
- 6-(2-N,N-Dimethylaminoethyl)-2-methoxybenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;
- $6\hbox{-}(2\hbox{-}N,N\hbox{-}Dimethylaminoethyl)\hbox{-}2,8\hbox{-}dimethoxybenzo[d] is othiazolo[3,2\hbox{-}a] indol\hbox{-}S,S dioxide;$
- 6-(2-N,N-Dimethylaminoethyl)-8-methylbenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;
- $6\hbox{-}(3\hbox{-}N,N\hbox{-}Dimethylamino-l\hbox{-}hydroxyprop-l\hbox{-}yl) benzo[d] is othiazolo[3,2\hbox{-}a] indol\hbox{-}S, S dioxide;$
- $\hbox{$4$-Bromo-6-(3-N,N-Dimethylamino-l-hydroxyprop-l-yl)} benzo[d] is othiazolo[3,2a]$
- indol-S,S-dioxide;
- $6\hbox{-}(3\hbox{-}N,N\hbox{-}Dimethylamino-l-hydroxyprop-l-yl)-8-methoxybenzo[d] isothiazolo[3,2a]\\$
- indol-S.S-dioxide;
- 6-(3-N,N-Dimethylamino-l-hydroxyprop-l-yl)-8-methylbenzo[d]isothiazolo[3,2a]

indol-S,S-dioxide;

- 4-Bromo-6-(3-N,N-dimethylamino-l-hydroxyprop-l-yl)-8methoxybenzo[
- d]isothiazolo[3,2-a]indol-S,S-dioxide;
- 6-[2-(4-MethyIpiperazin-l-yl)ethyl]benzo[d]isothiazolo [3,2-a]indol-S,S-dioxide;
- 6-[2-Morpholin-4-ylethyl]benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;
- 6-(2-Pyrrolidin-l-ylethyl)benzo[d] isothiazolo [3,2-a]indol-S,S-dioxide;
- 6-(2-Piperidin-l-yl)ethyl]benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;
- 4-Bromo-6-[2-morpholin-4-ylethyl]benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;
- 4-Bromo-6-(2-pyrrolidin-l-ylethyl)benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;
- 4-Bromo-6-[2-(4-methylpiperazin-1-yl)ethyl]benzo[d]isothiazolo[3,2-a]indol-S,Sdioxide;
- 6-(3-(Piperidin-l-yl)-1-hydroxyprop-l-yl)benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;
- 6-(3-(Piperidin-l-vl)-1-hydroxyprop-l-vl)-8-methoxybenzo[d]isothiazolo[3,2-a]indolS,
- S-dioxide:
- 4-Bromo-6-(3-(piperidin-l-yl)-1-hydroxyprop-l-yl)benzo[d] isothiazolo [3,2-a]indol-S,Sdioxide;
- $\hbox{$4$-Bromo-6-(3-(piperidin-l-yl)-1-hydroxyprop-l-yl)-8-methoxybenzo[d]$ isothiazolo[3\ ,2a]$ }$
- indol-S,S-dioxide;
- 6-(3-(Pyrrolidin-l-yl)-1-hydroxyprop-l-yl)benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;
- 6-(3-(Pyrrolidin-l-yl)-1-hydroxyprop-l-yl)-8-methoxybenzo[d] is othiazolo[3,2-a] indolS,
- S-dioxide;

Application No. 10/519,219 Docket No.: 03108/0202223-US0

Amendment dated June 23, 2009 Reply to Office Action of April 24, 2009

6-(2-(N,N-Diethylamino)-2-methylethyl)benzo [d]isothiazolo[3,2-a]indol-S,S-dioxide;

6-(2-(N,N-Dimethylamino-l-hydroxy-]-yl)benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

4-Bromo-6-(2-(N,N-Dimethylamino-l-hydroxy-l-yl)benzo[d]isothiazolo[3,2-a]indolS,

S-dioxide;

6-(2-(N,N-Dimethylaminoethyl)-2,4-difluoro-8-Methoxybenzo[d]isothiazolo[3,2a]

indol-S,S-dioxide;

6-(2-(N,N-Dimethylamino-2-methylethyl)benzo[d]isothiazo10[3,2-a]indol-S,S-dioxide;

4-Chloro-6-(2-(N,N-Dimethylaminoethyl)-8-methylbenzo[d]isothiazolo[3,2-a]indol-S.Sdioxide:

and

8-(2-(N,N-Dimethylaminoethyl)benzo[d] isothiazolo[3, 2-a]benzo(g)indol-S,S-dioxide, or its stereoisomers, its N-oxides, and its pharmaceutically acceptable salts.

- 3. (Previously presented) A pharmaceutical composition compnsmg either of a pharmaceutically acceptable carrier, diluent/s, excipient/s or solvents along with a therapeutically effective amount of a compound according to Claim 1, its tautomeric forms, its stereoisomers, its geometric forms, its N-oxides, and its pharmaceutically acceptable salts.
- 4. (Previously presented) A pharmaceutical composition according to Claim 3, in the form of a tablet, capsule, powder, lozenges, suppositories, syrup, solution, suspension or injectable, administered in, as a single dose or multiple dose units.

5-25. (Canceled)

Docket No.: 03108/0202223-US0

Application No. 10/519,219 Amendment dated June 23, 2009 Reply to Office Action of April 24, 2009

26. (Previously presented) below,

Novel intermediates of formula (III) are represented as given

$$\begin{array}{c|c}
R_1 & R_9 & H \\
R_1 & R_9 & H \\
R_1 & R_{11} \\
R_2 & R_3 \\
R_3 & R_4 & R_5 \\
\end{array}$$
(III)

wherein RI, Rz, R3, Rt, Rs, Rt, R7, Rg, R9, RIO, RII and RI2 may be the same or different and each independently represent hydrogen, halogen, perhaloalkyl, hydroxy, amino, nitro, cyano, formyl, amidino, guanidino, substituted or unsubstituted groups such as linear or branched (CIC12) alkyl, (Cz-C12)alkenyl, (Cz-Clz)alkynyl, (C3-C7)cycloalkyl, (C3-C7)cycloalkenyl, bicycloalkenyl, bicycloalkenyl, (CI-C1z)alkoxy, cyclo(C3-C7)alkoxy, aryl, aryloxy, aralkyl, aralkoxy, heterocyclyl, heteroaryl, heterocyclylalkyl, heteroaralkyl, heteroaryloxy, heteroaralkoxy, heterocyclylalkyloxy, acyl, acyloxy, acylamino, monoalkylamino, dialkylamino, arylamino, diarylamino, aralkylamino, alkoxycarbonyl, aryloxycarbonyl, aralkoxycarbonyl, heterocyclylalkoxycarbonyl, heteroaryloxycarbonyl, hydroxyalkyl, aminoalkyl, monoalkylaminoalkyl, dialkylaminoalkyl, alkoxycarbonylamino, aryloxycarbonylamino, aralkyloxycarbonylamino, aminocarbonylamino, alkylaminocarbonylamino, alkylaminocarbonylamino, dialkylaminocarbonylamino, dialkylguanidino, hydrazino, hydroxylamino; or the adjacent groups like R1 and Rz or Rz and R3 or R3 and Rt or Rs and R6 or R6 and R7 or R7 and Rg together with carbon atoms to which they are attached may form a 5, 6, or 7 membered ring, which may further optionally contain

Application No. 10/519,219 Docket No.: 03108/0202223-US0

Amendment dated June 23, 2009 Reply to Office Action of April 24, 2009

one or more double bonds and/or one or more heteroatoms such as the group "Oxygen", "Nitrogen", "Sulfur" or "Selenium" and combinations o

double bond and heteroatoms; or R9 and RIO or RII and RIz together represent double bond attached to "Oxygen" or "Sulfur"; or R9and RIO or RII and R12 together with the carbon atoms to which they are attached may form a 3, 4, 5, or 6 membered ring, which may further optionally contain one or more double bonds, and/or one or more heteroatoms such as the group "Oxygen", "Nitrogen", "Sulfur" or "Selenium", as above defined;

"n" is an integer ranging from 1 to 8.

27-29. (Canceled)

30. (Previously presented) The compound of claim 1, wherein n is 1 to 4.

31. (Previously Presented) The novel intermediates of claim 26, wherein n is 1 to 4.